

WHAT IS CLAIMED IS:

1. A method for producing a spacer by drawing a base glass material, having a cross sectional shape with different dimensions in vertical and lateral directions, under heating to a drawing temperature, and then by cutting into a desired length, wherein:
 - in a longitudinal direction of a cross section of the base glass material, a high-viscosity glass material is combined in at least both end portions of the low-viscosity glass material to obtain an entire cross-sectional shape having different dimensions in vertical and lateral directions, and said base glass material is drawn under heating at a drawing temperature at which both the low-viscosity glass material and the high-viscosity glass material have a viscosity within a range of 10^5 to 10^{10} dPa·s and the high-viscosity glass material has a viscosity higher than that of the low-viscosity glass material.
- 20 2. A producing method according to claim 1, wherein surfaces in at least both end portions of the low-viscosity glass material, in the longitudinal direction of the cross section of the base glass material, are covered with the high-viscosity glass material.
- 25 3. A producing method according to claim 1,

wherein entire surfaces of the low-viscosity glass material, along the longitudinal direction of the cross section of the base glass material, are covered with the high-viscosity glass material.

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4. A producing method according to claim 1, wherein entire surfaces of the low-viscosity glass material, along the longitudinal direction and shorter direction of the cross section of the base 10 glass material, are covered with the high-viscosity glass material.

5. A producing method according to claim 1, wherein glass materials of plural kinds are employed 15 as the high-viscosity glass material.

6. A spacer having a cross sectional shape with different dimensions in vertical and lateral directions, wherein:

20 in a longitudinal direction of a cross section of the spacer, a high-viscosity glass material is integrated with at least both end portions of a low-viscosity glass material to obtain a cross-sectional shape having different dimensions in vertical and 25 lateral directions, and the high-viscosity glass material shows a viscosity higher than that of the low-viscosity glass material in a state heated at a

temperature at which both the low-viscosity glass material and the high-viscosity glass material have a viscosity within a range of 10^5 to 10^{10} dPa·s.

5 7. A spacer according to claim 6, wherein surfaces in at least both end portions of the low-viscosity glass material, in the longitudinal direction of the cross section of the spacer, are covered with the high-viscosity glass material.

10 8. A spacer according to claim 6, wherein entire surfaces of the low-viscosity glass material, along the longitudinal direction of the cross section of the spacer, are covered with the high-viscosity glass material.

15 9. A spacer according to claim 6, wherein entire surfaces of the low-viscosity glass material, along the longitudinal direction and shorter 20 direction of the cross section of the spacer, are covered with the high-viscosity glass material.

25 10. A spacer according to claim 6, wherein glass materials of plural kinds are employed as the high-viscosity glass material.

11. A method for producing a spacer having

irregularities on a surface thereof by drawing a base
glass material, having a cross sectional shape with
different dimensions in vertical and lateral
directions and having plural grooves on an external
5 surface along a longitudinal direction of the cross
section, under heating to a drawing temperature and
then by cutting into a desired length, wherein:

the base glass material has a composite
structure constituted of a low-viscosity glass
10 material positioned in an internal layer of the base
glass material and a high-viscosity glass material
provided in an area including at least an external
surface along the longitudinal direction of said
cross section in a surface layer of the base glass
15 material;

the high-viscosity glass material at least
includes a member having plural grooves on an
external surface side; and

the base glass material is drawn under heating
20 to a drawing temperature at which both the low-
viscosity glass material and the high-viscosity glass
material have a viscosity within a range of 10^5 to
 10^{10} dPa·s and the high-viscosity glass material has a
viscosity higher than that of the low-viscosity glass
25 material.

12. A producing method according to claim 11,

wherein the low-viscosity glass material has a rectangular cross section and the high-viscosity glass material is applied on at least two surfaces in longer sides of the cross section of the low-viscosity glass material.

13. A producing method according to claim 12, wherein the high-viscosity glass material applied to the two surfaces in the longer sides of the cross section of the low-viscosity glass material include plural slat-shaped members, and said slat-shaped member has a width same as a pitch of said plural grooves and has two portions of different thicknesses corresponding to a peak portion and a bottom portion of said grooves.

14. A producing method according to claim 12, wherein the high-viscosity glass material, applied to the two surfaces at the longer sides of the cross section of the low-viscosity glass material, has a resistivity within a range of 10^8 to 10^{10} $\Omega\cdot\text{cm}$.

15. A producing method according to claim 12, wherein the high-viscosity glass material is further applied to two surfaces in shorter sides of the cross section of the low-viscosity glass material.

16. A producing method according to claim 15,
wherein the high-viscosity glass material applied to
the two surfaces in the shorter sides of the cross
section of the low-viscosity glass material, has a
5 resistivity within a range of 10^3 to 10^4 $\Omega\cdot\text{cm}$.

17. A spacer according to claim 16, wherein
glass materials of plural kinds are employed as the
high-viscosity glass material.

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18. A spacer having irregularities on a surface
thereof, comprising a composite structure integrated
by a low-viscosity glass material positioned in an
internal layer of the spacer and a high-viscosity
15 glass material provided in at least an area having
the irregularities in an external surface of the
spacer;

wherein the high-viscosity glass material has a
higher viscosity than that of the low-viscosity glass
20 material in a heated state at a temperature at which
both the low-viscosity glass material and the high-
viscosity glass material have a viscosity within a
range of 10^5 to 10^{10} dPa.s.

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19. A spacer according to claim 18, wherein the
low-viscosity glass material has a rectangular cross
section and the high-viscosity glass material is

integrated with at least two surfaces in longer sides
of the cross section of the low-viscosity glass
material.

5 20. A spacer according to claim 19, wherein the
high-viscosity glass material, integrated with the
two surfaces at the longer sides of the cross section
of the low-viscosity glass material, has a
resistivity within a range of 10^8 to 10^{10} $\Omega\cdot\text{cm}$.

10 21. A spacer according to claim 19, wherein the
high-viscosity glass material is further integrated
with two surfaces in shorter sides of the cross
section of the low-viscosity glass material.

15 22. A spacer according to claim 21, wherein the
high-viscosity glass material integrated with the two
surfaces in the shorter sides of the cross section of
the low-viscosity glass material, has a resistivity
20 within a range of 10^3 to 10^4 $\Omega\cdot\text{cm}$.

25 23. A spacer according to claim 18, wherein
glass materials of plural kinds are employed as the
high-viscosity glass material.